

# RESPONSIBLE RESPONSIVE WEB TYPOGRAPHY

c't webdev · Köln, Germany · February 5, 2020



Hi! 🖐️

I'm Damien.



Reading is one of the most **universal**  
yet **personal** human **activity**.



Buckle up!  
Let's talk about **readability**.



But first,  
why?





**I have a permit**

citytv

Reading is a **complex cognitive process**  
with an **important learning curve.**



**± 10%** of the global population  
is **having** a degree of **dyslexia**.

World Health Organization, 2011



Literacy is **not always a life-long skill.**  
You can acquire reading difficulties.



Not always since childhood:  
it can appear after **brain injuries, strokes**  
or just for **new languages** you are learning.



So no, **a text is not accessible by essence.**



In 2018, W3C-WAI introduced **an accessibility success criterion** related to readability.



## WCAG Success Criterion **1.4.12 Text Spacing** (Level AA):

In content implemented using markup languages that support the following text style properties, no loss of content or functionality occurs by setting all of the following and by changing no other style property:

- ▶ **Line height** (line spacing) to at least **1.5 times** the font size;
- ▶ **Spacing following paragraphs** to at least **2 times** the font size;
- ▶ **Letter spacing** (tracking) to at least **0.12 times** the font size;
- ▶ **Word spacing** to at least **0.16 times** the font size.





AUSLAND STATE OF THE UNION

### Was Trump in seiner Rede an die Nation nicht erwähnt

Die Spaltung Amerikas tritt während Trumps Rede zur „Lage der Nation“ offen zu Tage. Republikaner jubeln, Demokraten schweigen. Interessant ist auch, was der US-Präsident alles nicht erwähnt.

Daniel Friedrich Sturm 403



VIDEO REDE ZUR LAGE DER NATION

### „Für Trump eine ziemlich ausgezeichnete Woche“



AUSLAND REDE ZUR LAGE DER NATION

### Nach Trumps Rede zerreit Pelosi sein Manuskript

Nach der Rede zur Lage der Nation von US-Präsident Trump hat die Sprecherin des Repräsentantenhauses, Demokratin Nancy Pelosi, die Kopie der Ansprache zerrissen. Angesichts der Alternativen sei dies „die höfliche Variante“ gewesen.

501



AUSLAND IOWA

### Buttigieg liegt bei Demokraten-Vorwahl vor Sanders



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501



10 CORONAVIRUS-FÄLLE +++

8 DEUTSCHE AN BORD ++

CORONA-SEUCHENSCHIFF

STICHT WIEDER IN SEE

Wie lange das Kreuzfahrtschiff jetzt weiterfährt!

Reise-Experte beantwortet Ihre Fragen

Kann ich jetzt meine Kreuzfahrt stornieren?

TRUMPS REDE ZUR LAGE DER NATION

Das Beste kommt erst noch!

Sein Gesicht und seine Körpersprache demonstrierten: Ich bleibe noch vier weitere Jahre

„entführen“ Löwenbaby

STRECKBANK & BILD in

Dauer: 5:14 Min. 04.02.2020

HALLÖCHEN, POPÖCHEN! Security stoppt

Dauer: 0:51 Min. 03.02.2020

PARODIE AUF US-SERIE Bayern-Star

Dauer: 1:09 Min. 04.02.2020

BRUTALER MORD IN Vater soll Kinder

Dauer: 1:09 Min. 04.02.2020

BESTE HALBZEIT-SHOW Shakira und J.Lo

Dauer: 0:53 Min. 03.02.2020

PAKISTAN RUFT NOTSTAND Schlimmste

Dauer: 1:18 Min. 05.02.2020

DFB-POKAL-HIGHLIGHTS HIER IM VIDEO

Nagelsmann-3:1

Trainer-Rot und Kisten-

Moisaner vs. Reyna! 3:2

Aufregung

WCAG 1.4.12

c't webdev

February 2019

@iamhiwelo

WCAG 1.4.12 are **not a set of guidelines to apply,**  
but a series of rules to test.

When applied, **the layout should not break.**



# How do we read?



Reading is about **sounds**. 🎵

Reading is about **rhythm**. 🎶

Reading is about **music**. 🎼



Reading is mainly a **phonological process**,  
heavily influenced by the environment.



Reading is not linear,  
we are reading by *saccades*.



And between each saccades,  
we have something called *fixation*.



During a **fixation**, everything  
except the focus is blurry.



So reading is not so much about letters...  
it is more about **identifying shapes**.



## Typical result of eye tracking sessions

(extrapolated from the result of a study made by the Norman Nielsen Group (2017))

Web Content Accessibility Guidelines (WCAG) is developed through the W3C process in cooperation with individuals and organizations around the world, with a goal of providing a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally.



**Taht's wyh yuo cna porbalby raed tihs esaliy  
desptie teh msispeillgns.**

**That's why you can probably read this easily  
despite the misspellings.**



Shape recognition is possible thanks to  
letters' *identifying features*



**Readability**

**READABILITY**



problem

porbelm

pbleorm

Not only we recognize shapes,  
but we are also **identifying phonemes**,  
it is one of the methods used to recognize  
words despite misspellings in a sentence.



So, that's **how** we read.  
But, **what's the point?**



Because **multiple cognitive processes** are involved,  
this **universal method** becomes **highly personal**.



Readability is far **more than font style and size.**  
**Colors, spacing, tracking, layout** can have an impact.



I never really said much about love, though. Jill was very intelligent, and I have no knack for hiding my feelings. But we didn't talk much about it. If I had poured out statements of love, it would have just made her feel worse. I let it be tacit. One thing we agreed upon was that love was something there was no point in asking for. It was either simple or impossible. If you had to ask for it, it just meant it was impossible.

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The **gradient** helps you to **track your position in a sentence**.

The usage of **different colors** helps you to **track your position in a paragraph**.



**Inline color variations and gradients improve readability for dyslexic & ADHD folks**

Laboratory for Visual Learning at the Harvard-Smithsonian Center for Astrophysics

**People can adapt their experience to their needs,  
even if they are often not aware of that.**



For example, assistive technologies are doing  
**more than offering “*screen-reader*”-ish experiences.**







AUSLAND

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REDE ZUR LAGE DER NATION

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VIDEO

REDE ZUR LAGE DER NATION

### „Für Trump eine ziemlich ausgezeichnete Woche“

In der Rede zur Lage der Nation lobte der US-Präsident Donald Trump seine bisherige Präsidentschaft. Und auch das



AUSLAND

IOWA

### Buttigieg liegt bei Demokraten-Vorwahl vor Sanders

Der Ex-Bürgermeister Pete Buttigieg liegt bei der ersten Vorwahl der Demokraten



i.e. Midnight Lizard applies a custom color scheme to all visited websites



Home



Explore



Notifications



Messages



Bookmarks



Lists



Profile



More

Tweet

Home



What's happening?



Tweet



Luke

On

at n

sha



The race for presidential delegates has officially begun. ...  
Vox will be tracking the delegates throughout the primary season.

[vox.com](#)

1



Luke

On

at n

sha



The Viewbuilder Pattern  
Many companies have internal APIs that provide their data, but scaling these can be tricky and expensive. The...

[lukeb.co.uk](#)

1



Marie van Driessche Retweeted

**Frozen Rockets** @frozenrockets · 1h

🌟 De volgende #ContentDesignNL meetup is op 27 februari bij @levellevel in Rotterdam.

🎓 We hebben drie toffe sprekers:

[@clarityguy](#) en Virginia Rispoli – Your next designer should be a UX Writer

[@marievandries](#) – Inclusive Design, more than you hear



Search Twitter

Am

Amsterdam trends



1 ·

#d

Trending



2 ·

#l

Iddeu

3 ·

#

Trending



1 ·

#

ULIEurope2020

2 ·

#

Trending



1 ·

#

harari

1,890 Tweets

4 ·

#

Trending



1 ·

#

Syri

5 ·

#

K-Pop · Trending



1 ·

#

#LOONA\_SOWHAT

241K Tweets

1 ·

#

Show more

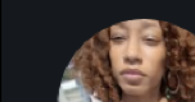
Who to follow



Xiye Bastida

@xiyebastida

Follow



Tae'lur Alexis

Follow



But you can also offer variations for people not using assistive technologies. Twitter offers **font size**, **primary color** and **background color** customization.

Let's take a look to something  
designed for readability.







Baggage hall



Exit



Gates **BDEFGH**



Gates **C** 21-26



Transfer **T2-9**

A series of weight variations for a good visual hierarchy





Baggage hall



Exit



Gates

**BDEFGH**



Gates

**C** 21-26



Transfer

**T2-9**

A tracking depending of the context



credits: Mijksenaar



A system as consistent as possible





This is readable, and efficient. Great. But can we do better?

credits: Mijksenaar

So, I'm sold.

**What can we do?**



Based on the airport signs,  
here's 8 **universal guidelines** to apply:



1.

**Divide** your content  
in **sections.**



2.

**Structure** your content  
with **headings**.



3.

Provide **visuals**  
to **illustrate the content**



4.

Be **straightforward**,  
go directly to the point



5.

Limit the usage of  
italic and all-caps





There is never  
too much **white space**



7.

Break lines after  
50–70 characters



8.

Use **colors** and **bold**  
to **highlight** information



These guidelines are **not only about design,**  
it must **rely on a semantic implementation.**



**HTML & CSS rock.**

**Good accessibility comes out of the box  
with a semantic HTML**



**Use relative sizes instead of fixed values**



Using **rem** is straightforward.  
Especially with tricks like a **62,5% font-size on :root**



Variable fonts will help you  
doing the extra mile.



# Accessibility is hard.



It is hard because  
there is **no one-fits-all** solution.



**Creating accessible and inclusive experiences  
is about collaboration and customisation.**



Variable fonts can help **create collaboration**  
between designers and engineers.



We can use variable fonts to offer a **better**  
**experience** when **using justification**.



**Variable fonts can also help users  
to customize their experience.**



**Customization is needed because  
we have different capabilities,  
we are used to different media and platforms,  
and we are not reading the same way.**



There is **no standard “readable” experience.**



**When we aim to provide content to users, there is 3 strategies:**



AMP



Medium



Flipboard



Feedly



Pocket



Kindle



RSS feed



ATs

**Pushing a single reading experience  
regardless of the needs of your users**

**Providing the content with limited customization  
(font size, font family, background color, ...)**

**Offering the content only,  
the user is free to customize**





AMP



Medium



Flipboard



Feedly



Pocket



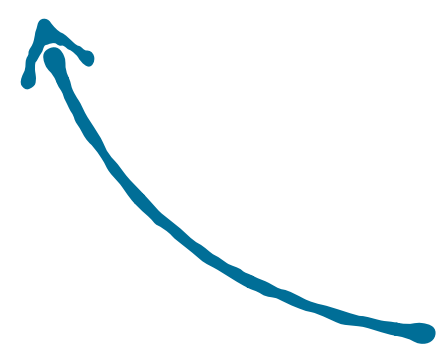
Kindle



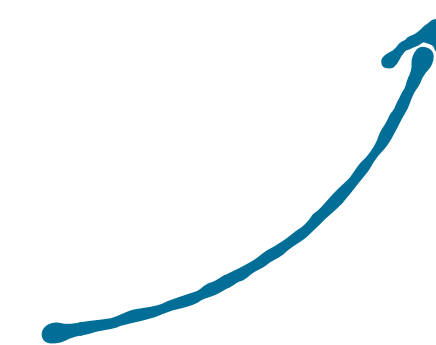
RSS feed



ATs



Variable fonts can offer the best of both worlds



**You can think about variable fonts like a  
super-complete font-size toggle.**

**Only downside: it can't rely on the browser.**



What is **the variable** part  
of a variable font?



## Cruise Control

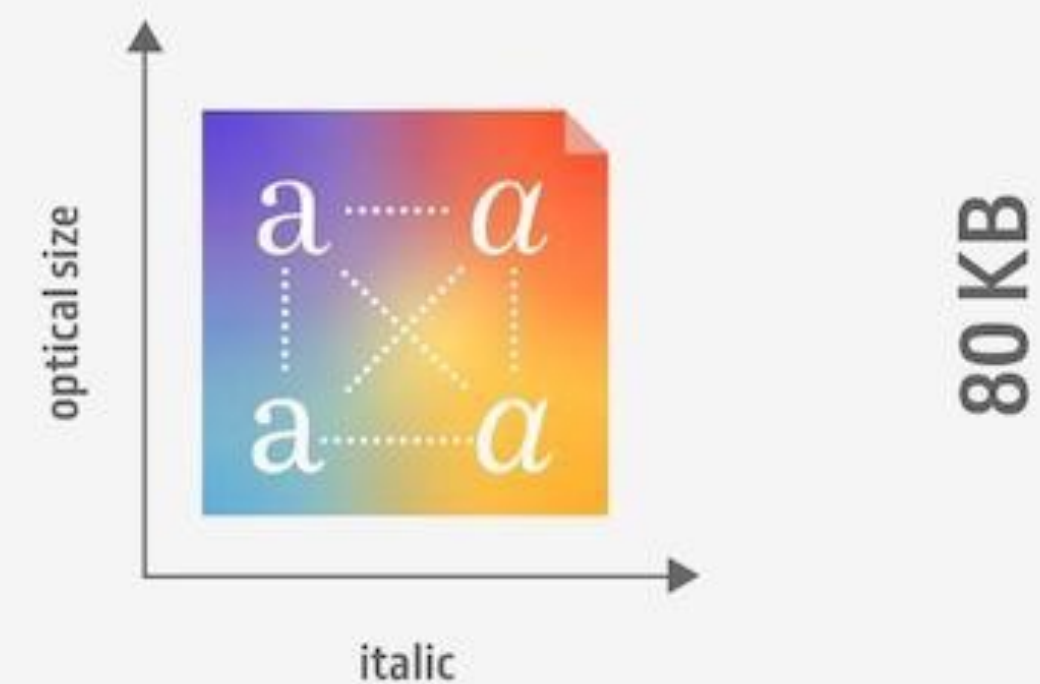
Antony Hudek

There is an intriguing mention of gay hustling in Russell Ferguson's essay in the catalogue of his Larry Johnson exhibition at the Hammer Museum, Los Angeles, in 2009. Referring to a group of works by Johnson from the late 1980s, Ferguson writes that they 'had a particular locus: the hustler stretch of Santa Monica Boulevard with which Johnson had become familiar in the early 1980s'.<sup>1</sup> The diptych *Untitled (John-John and Bobby)* (1988) [p.163], for example, describes on one panel the relationship between the brothers John-John and Bobby — clear allusions to the Kennedys — and on the other making of a porn film starring John-John accompanied by 'other hustler-boy co-stars', with Bobby behind the camera. As Ferguson writes, what 'unites these apparently disparate ideas [politics, porn, American mythology and the unconscious] is the question of spontaneity. How much control can we really have over impulses rooted in childhood events?'<sup>2</sup>

In another work in the same series, *Untitled (I Had Never Seen Anything Like It)* (1988), Johnson makes the reference to hustling even more explicit, quoting Gregg Tyler's *The Joy of Hustling* (1976):

*On one occasion when I was walking Sunset Boulevard, an absolutely beautiful muted green car pulled up beside me. I had never seen anything like it before, but I learned it was a Jaguar XKE, and I recognized the young man who was driving it. For purposes of our story, we will call him Quint Vantage, since he is a well-known and highly successful actor whose success is largely dependent upon his air of machismo ...*

Ferguson places these works in the context of the late 1980s and early 1990s, when AIDS began taking its toll, while politicians failed to acknowledge the extent of the pandemic and mainstream media outlets revelled in depictions of ailing patients, mostly gay men. 'For Johnson' at the time, Ferguson observes, 'it felt like a political necessity to be publicly out'.<sup>3</sup>



Source: [Enhancing the On-Screen Reading Experience With Variable Fonts](#)  
Bianca Berning, Blog Shopify Partners

c't webdev · February 2019 · @iamhiwelo

There is **4** registered axes.



oo oo oo oo oo  
oo oo oo oo oo  
oo oo oo oo oo  
oo oo oo oo oo



Source: [Variable fonts for a variable world](#)  
Phil Garnham, Fontsmith

c't webdev · February 2019 · @iamhiwelo

# Weight



```
.selector {  
  font-variation-settings: 'wght' $value;  
}
```



# Width



```
.selector {  
  font-variation-settings: 'wdth' $value;  
}
```



# Italic



```
.selector {  
  font-variation-settings: 'ital' 1 | 0;  
}
```



# Slant



```
.selector {  
  font-variation-settings: 'slnt' $value;  
}
```



Variable fonts offer also **custom axes**  
defined by the font designer.



**And that's the real game changer:  
the ability to configure **the optical size.****



The **optical size** is an **old design concept**  
finally available for our Web experiences.



# Optical Size

```
• • •  
.selector {  
  font-optical-sizing: auto;  
  /* or */  
  font-variation-settings: 'opsz' $usuallyFontSizeValue;  
}
```



**Each optical size can be one of the variations  
defined in a design systems.**

**(i.e. body, small text, caption, subhead, display variations)**



## Emphasis styles

To communicate content hierarchy, use the core typographic scale first. Once the main hierarchy is established, if two pieces of text of the same style have different positions in the content hierarchy, the Subdued style may be used to de-emphasize one of them. Subdued content isn't unimportant or superfluous, but rather makes room for the eye to orient itself and focus on core content.



Do

Use subdued with any text style.

# DisplayXLarge

## Subdued

## DisplayLarge

## Subdued

## DisplayRegular

Subdued

## Heading

## Subdued



Do

Use subdued with any text style.

DisplaySmall

Subdued

## Body

Subdued

## SUBHEADING

## SUBHEADING

Caption

Caption

In general, avoid using the subdued on its own, when not contrasting with other text from the same part of the type scale. However, subdued can be used for standalone content when it represents a non-actionable or otherwise unimportant state, such as when the normal content is absent.





With **only one font file**,  
we could offer **an important number of variations**.



It could include all design variation needed,  
but also **some accessibility presets.**



With dyslexia, there is **3 main axes** to watch:  
**ascender or descender length,**  
**bowl size and bowl shape.**



With dyslexia, there is **3 main axes** to watch:  
**ascender or descender length,**  
**bowl size and bowl shape.**

b p d



# Dyslexia Axis



# Dyslexia Axis



Source: [An exploration of Variable Fonts](#)  
Mathieu Triay, BBC Research & Development Blog

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Wanna **experiment**  
with your projects?



[About me](#)[Talks & Workshops](#)[Blog](#)

# Accessibility & Design

I am **Damien**, a **Web designer** and **engineer**, designing **design systems**, trying to make **Web accessibility** accessible, and the Web a more **inclusive** place.

During the day, I am building the **accessible design system** and its team at **Castor** with **semantics**, **usability**, and **progressive enhancement** in mind.

In my spare time, I help people to bring accessibility in their work and projects through **consultancy** and **workshops**. I also often talk about **Web accessibility**, **readability** and building **accessible design systems** in conferences worldwide.



**Font size, optical size and media queries:** an endless world of opportunities

DUMP DIDOT  
OUT EASION  
CRASH TIMES  
DELEPHONIC



Variable fonts like Fit can offer **new ways to play with the layout.**

UK



# NO-ONE CHARGED 'FOR 9 OUT OF 10 CRIMES'

🕒 42 minutes ago | 💬 117



Only 9% of crimes end with suspects being charged

UK



## Morrisons 'quiet hour' for autistic shopping introduced

🕒 2 hours ago | 💬 131



BBC Breakfast's Tim Muffett goes shopping with Joanne Tang and her son Oscar, who has autism



Adapting the font design to the message, like this experimentation by the BBC

# MERIT BADGE IS A VARIABLE COLOR FONT.



You can **experiment with color** and **font variations**

# "AMPERSAND"

**The Web Typography Conference**

A day of inspiration and cutting edge techniques from worldwide experts



**29 JUNE 2018**

**Duke of York's Picturehouse, Brighton, UK**



You can be **creative**,  
while offering an **easy way for people to remove the custom font** if needed



You can also **adapt the text**  
based on **external factors**

Source: [Enhancing the On-Screen Reading Experience With Variable Fonts](#)  
Bianca Berning, Blog Shopify Partners

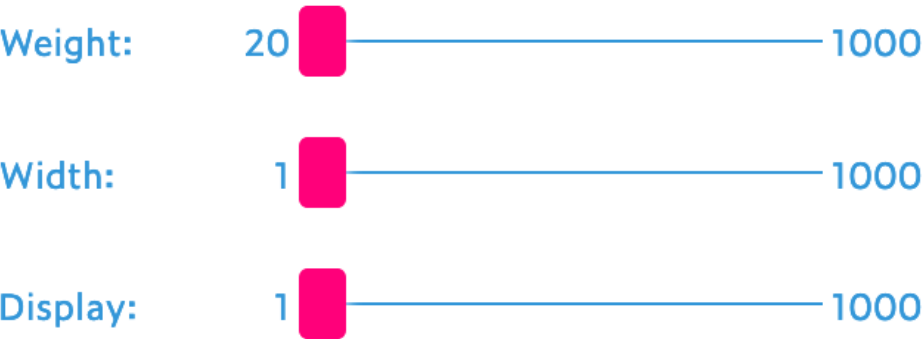
**Finally, I would advise you  
to follow David Jonathan Ross.**



**But also to read BBC's experimentations,  
and to visit [v-fonts.com](http://v-fonts.com) and [axis-praxis.org](http://axis-praxis.org).**



GT Alpina



A serif type series with quirky details. Each font includes a set of variable dingbats/emoji.

Design: Reto Moser  
Publisher: Grilli Type  
Characters: Latin, Dingbats/emoji  
Release: 2020-01-15  
Licensing: Paid/commercial  
Info/fonts: [gt-alpina.com](https://gt-alpina.com)

GT Alpina

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijkl  
mnopqrstuvwxyz 0123456789

GT Alpina Italic

*ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklm  
nopqrstuvwxyz 0123456789*

GT Alpina Typewriter

ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnop  
qrstuvwxyz 0123456789

GT Alpina Typewriter Italic

*ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnop  
qrstuvwxyz 0123456789*

A selection of GT Alpina's dingbats/emoji



**One font file to rule them all.**

**Ready to implement?**



**Merci beaucoup ! 🇫🇷**      **Bedankt! 🇳🇱**

**Thank you! 🇬🇧**      **Tack så mycket! 🇸🇪**

**Vielen Dank! 🇩🇪**      **Tusen takk! 🇳🇴**



@iamhiwelo

# Damien Senger

Queer Web worker, specialized in accessibility & design systems.

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@iamhiwelo